California Department of Public Health
Radiation Monitoring Report April 1, 2011

AIR:

California Department of Public Health (CDPH) air monitors detected only trace amounts of radiation following the nuclear emergency in Japan. Radiation levels remain below the average amount from natural sources in California.

The air samples, taken in Humboldt Bay, Eureka, Richmond, Livermore, Avila Beach, San Luis Obispo, Los Angeles, San Clemente and San Diego from March 24-30 indicate the trace presence of Iodine-131.

The amounts are so small that according to U.S. Nuclear Regulatory Commission standards, they are at least a thousand times less than amounts that would cause a public health concern. Due to the distance from Japan to the West Coast, no health impacts from the nuclear emergency in Japan are currently expected.

We are exposed to radiation every day, both from natural sources, such minerals in the ground or radiation from the sun, and from man-made sources such as medical x-rays. The average annual radiation dose per person in the U.S. is 620 millirem.

On the chart below, the numbers in the final column represent the additional dose (in millirems) to a person if they were breathing air for one year with the trace amounts of radiation detected. For example, in Los Angeles on March 25, the readings indicate that an individual's annual radiation dose would increase by slightly more than eighteen hundredth (0.18) of one millirem over the course of a full year. As a basis of comparison, a typical chest x-ray results in a dose of approximately 4-10 millirem. A Los Angeles-to-Chicago airplane flight results in a dose of approximately 2-3 millirem.

Sample Station	Date Collected	Results	Element Detected	Concentration Measured (picoCuries per cubic meter of air)	Estimated Radiation Dose per Year (millirem)
Humboldt Bay	3/24/11	Detection of:	Iodine-131	0.46	0.11
	3/26/28	Detection of:	Iodine-131	0.26	0.06
	3/28/11	Detection of:	Iodine-131	0.19	0.05
Eureka	3/26/11	Detection of:	Iodine-131	0.32	0.08
	3/28/11	Detection of:	Iodine-131	0.14	0.04
Richmond	3/28/11	Detection of:	Iodine-131	0.22	0.13
	3/30/11	Detection of:	Iodine-131	0.16	0.04
Livermore	3/28/11	Detection of:	Iodine-131	0.30	0.07
	3/30/11	Detection of:	Iodine-131	0.10	0.02
Avila Beach	3/28/11	Detection of:	Iodine-131	0.29	0.07
Los Angeles	3/25/11	Detection of:	Iodine-131	0.73	0.18
	3/28/11	Detection of:	Iodine-131	0.30	0.08
San Luis Obispo	3/28/11	Detection of:	Iodine-131	0.15	0.04
San Clemente	3/28/11	Detection of:	Iodine-131	0.16	0.04
San Diego	3/28/11	Detection of:	Iodine-131	0.27	0.07

Milk:

Like the air samples outlines above, CDPH detected only trace amounts of radiation in milk sampled in San Luis Obispo. The iodine-131 concentration level detected in the milk sample is 1,395 times less than standard of the US FDA (4,645 pCi/liter of milk). The resultant dose is approximately 0.01 millirem per week. Further, iodine-131 has a physical half-life of 8 days, which means iodine-131 detected in the milk sample decays very quickly.

Sample Station	Date Collected	Results	Element Detected	Concentration Measured (pCi/liter)	Estimated Dose (millirem/week)
CalPoly Dairy Farm	3/28/11	Detection of:	iodine-131	3.33	0.01

Notes:
CDPH has air sampling stations in nine locations in California. Samples collected from these stations are analyzed for radioactive elements including Barium-140, Cerium-141, Cerium-144, Cesium-134, Cesium-137, Iodine-131, Iodine-132, Ruthenium-103, Ruthenium-106, Tellurium-132, and Zirconium-95.

Estimated dose is calculated by methods described in Title 10 of the Code of Federal Regulations Part 20, Standards for Protection Against Radiation, Appendix B, Table 2. Dose values for each radionuclide assume the individual will be exposed at this concentration continuously over the course of a year. Information to date indicates that the duration of exposure should not exceed a few weeks.

Link to raw data: http://www.cdph.ca.gov/programs/Documents/CDPH-RHB-PreLabAnalysis-2011-04-01.pdf

Link to Air Sampling Map: http://www.cdph.ca.gov/programs/Documents/CDPH-RHB-SamplingStationMap.pdf